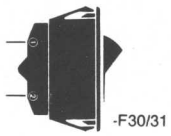
CONDENSED CATALOG

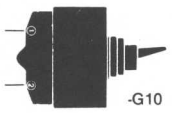

# CIRCUIT BREAKERS

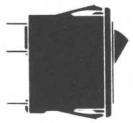
**setting the pace for circuit protection**

# setting the pace for circuit protection

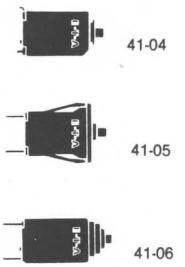
## ON-OFF Switch Circuit Breakers

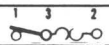


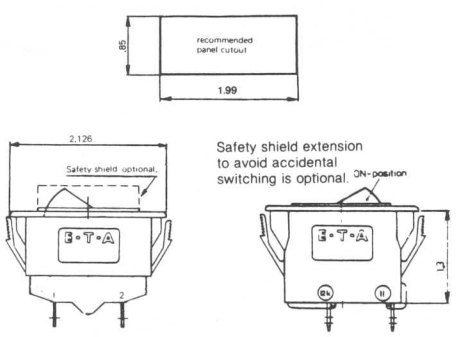
3120-F621 fits panel cutout Heinemann TX2 and AIRPAX 203-11 2 pole.



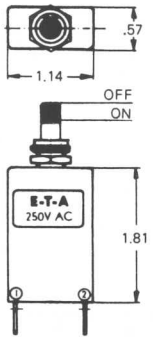

| Series | 41-10-P10/41-11-P10 | 3120-F321 | 45-700-IG1-P10-DD | 41-04-PR<br>41-05-P30<br>41-06-P30 |
|---|---|---|---|---|
| **Description** | Single pole, series trip Rocker, Toggle or Baton handles in many colors. (Illumination Optional) | Double pole, identical Snap-in mounting of single pole 41-10/41-11 series (Illumination Optional) | Single pole, series trip B/W button trip indicator Push ON/Push OFF Switching | Series trip, miniature. 41-04-PR; PC Board Mount 41-05-P30: Snap-in Mount 41-06-P30: Panel Mount |
| **Current ratings - See Table Pg 8** | 0.1 thru 20A | 0.1 thru 16A | 0.05 thru 25A | 0.05 thru 10A |
| **Maximum voltage ratings** | 250V ac or 28V dc | 250V ac or 28V dc | 250V ac or 28V dc | 250V ac or 28V dc |
| **Maximum interrupting capacity** depending on current rating, UL 1077 approved breakers have been tested to 2000A. | 10 times rated current normal use. UL up to 2000A. | 10 times rated current 0.1-2A. 300A for ratings 2.5-16A. UL tested to 2000A. | 10 times rated current normal use. UL up to 2000A. | 6 times rated current. UL up to 1000 A. 5 times for ratings 3.5 thru 5A, 4 times for ratings 6 thru 10A. |
| **Current capacity of auxiliary contacts, NO, NC. See wiring diagrams pg. 7** | NA | 5A resistive 3, .110" quick connect NO-NC-COM | NA | NA |
| **Life** | 6000 cycles (UL 1077) 25,000 mechanical | 6000 cycles (UL 1077) 25,000 mechanical | 6000 cycles (UL 1077) 10,000 mechanical | 2000 cycles at rated current |
| **Terminals** | .250 quick connect | .250 quick connect | .250 quick connect | .110 quick connect |
| **Shunt circuit—A3, optional**  | Optional; specify—A3 | Optional | Optional; specify—A3 | Optional; specify—A3 |
| **Approvals** E-T-A also has European approvals, such as VDE etc. Additional info upon request | UL 1077: E67320 CSA: 16186 VDE | UL 1077: E67320 CSA: 16186 VDE | UL 1077: E67320 up to 16A CSA: 16186 up to 15A VDE | UL 1077: E67320 CSA: 16186 VDE |
| **Design notes** See technical data sheets for data | 41-10 is unlighted 41-11 is illuminated<br>See page 7 for all options | See pg 7 for options:<br>• handle colors<br>• handle marking<br>• Illumination<br>• Amp ratings | Aircraft styling B/W reset button. Ideal for marine control panels. Screw terminals, (—S10) optional. | Smallest full feature circuit breaker. .250 quick-connect avail. non-standard (—P10) |
| **Technical Data Sheet** | Catalog Sheet 40129<br>Catalog Sheet 40130 | Catalog Sheet 40136 | Catalog Sheet 40132 | Catalog Sheet 40127 |

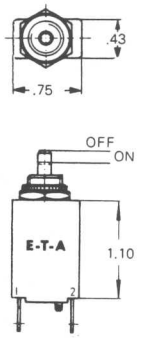
**Physical Dimensions in Inches**

All dimensions without tolerances are for reference only. In the interest of improved design and performance, E-T-A reserves the right to make changes in these specifications.




Shown: 41-10/-11-F30

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# Single Pole Overcurrent Circuit Breakers

| | | | | | | |
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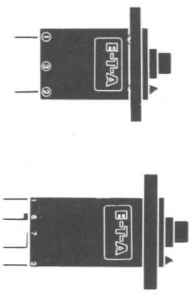
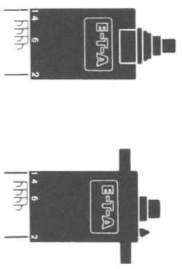
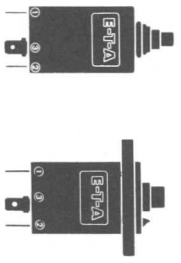
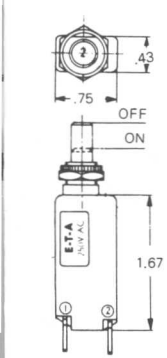
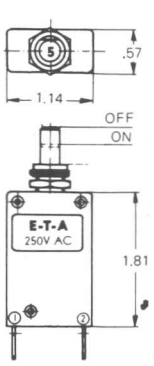
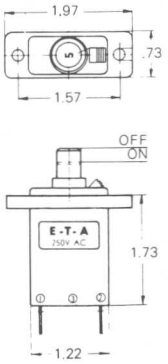
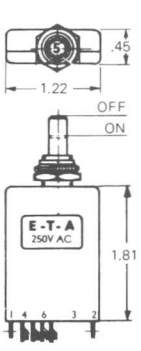
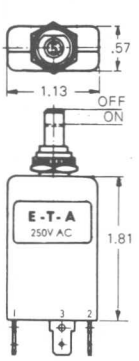
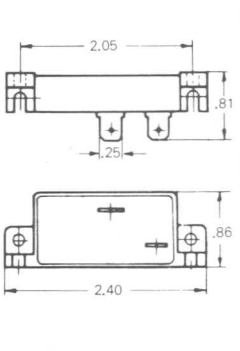
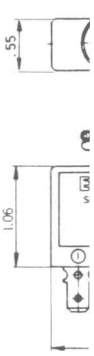
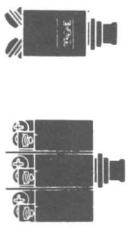
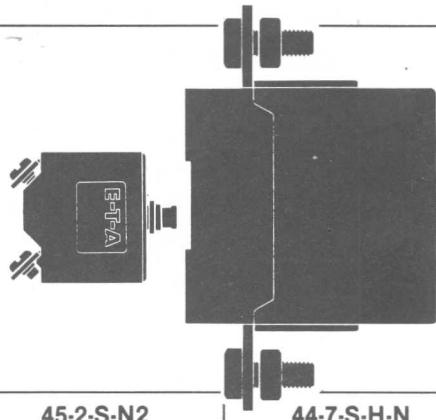
|  |  |  |  |  |  |  |
| **44-100-P10** | **45-700-IG1-P10** | **45-000-P10-H**<br>**45-400-P10-H** | **46-400-L10-Si**<br>**46-200-L10-Si-H** | **44-800-P10**<br>**44-500-P10-H** | **46-500-P10** | **1658** |
| ies trip | Series trip | Series trip<br>on-off switching<br>2 pole: series 45-400  | Series trip<br>two auxiliary<br>contacts NO, NC<br>46-200-L10-Si-H has<br>ON-OFF switch | Two independent<br>circuits (relay-trip)<br>44-500-P10-H<br>with ON-OFF switch  | Series trip<br>automatic reset | Series trip<br>Direct repl<br>for MP 160<br>and P&B W |
| 5 thru 5A | 0.05 thru 25A | 0.05 thru 25A | 0.05 thru 16A | 0.05 thru 8A | 0.1 thru 15A | 5 thru 25A |
| V ac or 28V dc | 250V ac or 28V dc | 250V ac or 28V dc | 250V ac or 28V dc | 250V ac or 28V dc | 250V ac or 28V dc | 250V ac or |
| mes rated current<br>circuit breaker, nor-<br>l use. UL up to<br>0A. | 10 times rated current of circuit breaker, normal use. UL up to 2000A. | 10 times rated current of circuit breaker, normal use. UL up to 2000A. | 10 times rated current of circuit breaker, normal use. UL up to 2000A. | main circuit 100A resistive. Control circuit 8 times rated current | 6 times rated current of circuit breaker, 60A maximum | 2000A UL<br>according<br>std. 1077 |
| NA | NA | NA | 1A resistive<br>4 solder terminals (Std.) | NA | NA | N |
| 0 cycles<br>ated current | 6000 cycles<br>at rated curent | 6000 cycles (UL 1077)<br>at rated current | 6000 cycles<br>at rated current | 6000 cycles<br>at rated current | 10,000 cycles at<br>200% rated current | 2000 cycle<br>at rated cu |
| 0 quick connect | .250 quick connect | .250 quick connect | Solder terminals | .250 quick connect | .250 quick connect | .250 quick |
| tional; specify—A3 | Optional; specify—A3 | Optional; specify—A3 | Optional; specify—A3 | Relay trip, standard | Optional; specify—A3 | N |
| 1077: E67320<br>A: 16186 up to 3.5A<br>E | UL 1077: E67320<br>up to 16A<br>CSA: 16186 up to 15A<br>VDE | UL 1077: E67320<br>up to 16A<br>CSA: 16186 up to 15A<br>VDE<br>Series 45-400: VDE only | UL 1077: E67320<br>up to 16A<br>CSA: 16186 up to 15A<br>VDE | CSA: 16186 | UL: E29255<br>CSA: 16186<br>VDE | UL 1077: E<br>up to 15A<br>CSA: 1618<br>VDE: on re |
| der or other quick-<br>nect available, non-<br>ndard | Screw terminals available, non-standard. Version for Class 2 transformers available: Specify 45-700-P10-CL2 3.2 or 5A. | Screw terminals available, non-standard. UL approved for primary ON/OFF switching. 45-400: NC aux. contacts 5A max. continuous. | .250 quick-connect main terminals available, non-standard (—P10) | Screw terminals available non-standard (—S10), series 44-500-P10-H for ON/OFF switching. | Screw terminals 1, 2 available (—S20), non-standard | Right angle<br>or screw ter<br>available.<br>7/16 D moun<br>3/8 D mounti |
| alog Sheet 40118 | Catalog Sheet 40119 | Catalog Sheet 40120 | Catalog Sheet 40102 | Catalog Sheet 40104 | Catalog Sheet 40701 | Catalog She |
|  |  |  Shown: 45-000-P10-H |  Shown: 46-400-L10-Si |  Shown: 44-800-P10 |  |  Shown: 1658 |

# Military Type Circuit Breakers






| -P10 | 483-TC-S14/1 pole<br>583-TC-S14/3 pole | 48-2-S14-LN2 | 41-2-S14-LN2 | 41-3-S14-LN2 | 45-2-S-N2 | 44-7-S-H-N |
|---|---|---|---|---|---|---|
| cement<br>)<br>58 | Series trip, push-pull on-off switching. Single or Three pole. | Series trip, push-pull, on-off switching. Similar devices also avail. for 2 pole (45-62-S) or 3 pole (45-82-S) use. | Series trip push-pull on-off switching | Series trip push-pull on-off switching | Series trip push-pull on-off switching | Series trip on-off switching |
| | 1 thru 25A | 3 thru 35A | 1 thru 25A | 30 thru 70A | 60,70,80,90,100A | 125,160,225,300,40 |
| 28V dc | 115V ac or 28V dc | 115V ac or 28V dc | 115V ac or 28V dc<br>250V ac upon request | 115V ac or 28V dc<br>250V ac upon request | 28V dc<br>ac ratings upon request | 28V dc |
| ested<br>o | Up to 2500A at 115V ac. Up to 6000A at 28V dc | 500 A for current ratings 3-5A.<br>3500 A for current ratings 7.5 - 35A. | 10 times rated current for current ratings 1-5A<br>1000A for current ratings 8-25A | 2000A at 28V dc | 8000A at 28V dc<br>1000A at 250V ac<br>2000A at 115V ac | 10,000A at 28V dc |
| | on request | NA | NA | NA | NA | 5A resistive<br>4 screw terminals, optional |
| rent | 10,000 cycles at rated current | 5000 cycles at rated current | 4000 cycles at 200% rated current | 2000 cycles at rated current | 1000 cycles at rated current | 1000 cycles at rated current |
| connect | Screw terminals | Screw terminals | Screw terminals | Screw terminals | Screw terminals | Screw terminals |
| | NA | NA | NA | NA | NA | NA |
| 67320<br>up to 15A<br>est | Environmental tests according to VG 9521. Will meet MIL | will meet MIL E 5272 C | will meet MIL E 5272 C | will meet MIL E 5272 C | will meet MIL E 5272 C | will meet MIL E 5272 C |
| ick connect<br>nals<br>ng:-G41<br>g:-G21 | State-of-the-art, temperature compensated. Similar to MS 3320. | Melamine housing. Corrosion, humidity, and fungus resistant. Front panel seal available.<br>For detailed tech. data 2 & 3 pole: Cat. sht. 40339 | Melamine housing. Corrosion, humidity, and fungus resistant. Front panel seal available. | Melamine housing. Corrosion, humidity, and fungus resistant. Front panel seal available. | Melamine housing. Corrosion, humidity, and fungus resistant. Front panel seal available. | Auxiliary circuits NO, N available, order —Si. |
| t 40140 | Cat. Sheet 40112-c2A | Catalog Sheet 42521 | Catalog Sheet 40103 | Catalog Sheet 40112 | Catalog Sheet 41813 | Catalog Sheet 41814 |
| 641-04-P10 | Shown: 483-TC | | | | | |

| Magnetic | Thermal-Magnetic Circuit Breakers | | | | Three Pole Overload |
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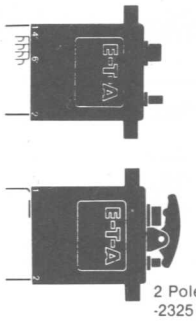
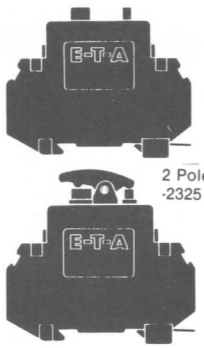
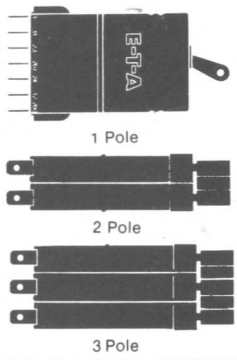
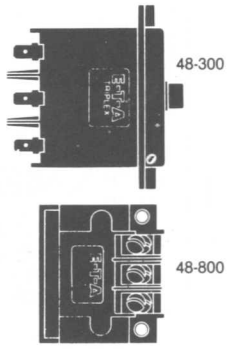
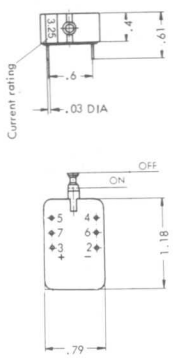
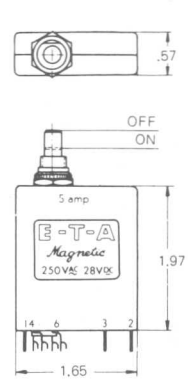
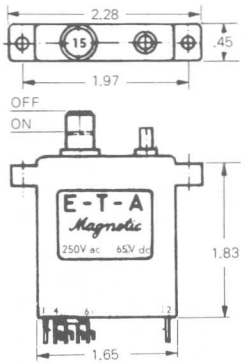
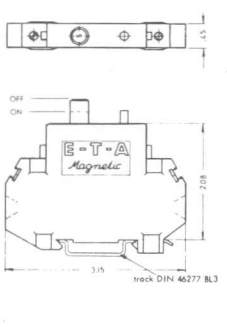
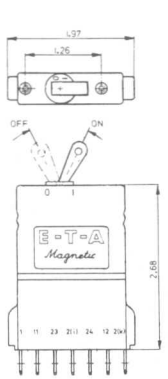
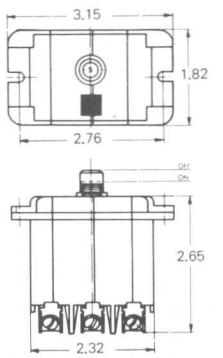
|  |  |  |  |  |  |
| **48-08** | **43-400-L10** | **43-500-L10<br>43-500-L10-2325** | **42-01<br>42-01-2325** | **2210** | **48-300-S<br>48-800-S** |
| Magnetic, undelayed trip, PC board mount, NO and NC contacts. ON-OFF switching. | Series trip, two auxiliary contacts NO, NC optional (-Si). Fast Acting: specify series 43-300 | Series trip, UL approved for primary ON-OFF switching. Two pole version: order -2325, has rocker handle. | Series trip, ON-OFF switching. DIN track 3 mounting. Adapter for DIN track 1 available. | Series trip, ON-OFF switching. Aux. contacts std. 1, 2, 3 or 4 pole configuration. | Series trip, ON-OFF switch (-H) optional, auxiliary contacts NO, NC (suffix-Si) optional. Auto-reset version 0.1-5A: 48-800. |
| 0.01 thru 3.25A | 0.05 thru 15A | 0.05 thru 15A | 0.1 thru 15A | 0.1 thru 16A | 0.5 thru 15A |
| 115V ac or 60V dc | 250V ac or 65V dc | 250V ac or 65V dc | 250V ac or 65V dc | 250V ac or 65V dc | 0.5—5A: 500V ac<br>5.5—15A: 380V ac |
| 40A at 115V ac/60V dc<br>60A at 48V ac/dc<br>100A at 24V ac/dc | 200A normal use.<br>UL up to 1000A. 1500A/250V ac version, current ratings 8-15A. E-T-A series 43-4-P10 (not-Si) | 200A normal use.<br>UL up to 1000A. 1500A/250V ac version, current ratings 8-15A. E-T-A series 42-1-P10 (not-Si) | 200A normal use.<br>UL tested to 1000A. | 500A normal use, not to exceed 100 times rated current | 6 times rated current of circuit breaker |
| NO contacts:<br>5A continuous at 24V | 1A resistive<br>4 solder terminals optional | 1A resistive<br>4 solder terminals optional. (single pole only) | NA | 1A resistive,<br>4 quick connects, standard | 3A resistive at 250V ac, 4 solder terminals, optional |
| 10,000 cycles at rated current | 4000 cycles at 200% rated current | 6000 cycles (UL 1077) at rated current | 6000 cycles (UL 1077) at rated current | 10,000 cycles at rated current | 5000 cycles at rated current |
| 6 PC board pins | Solder terminals | Solder terminals | Screw clamp terminals | .250 quick connect (7x) | Screw terminals |
| can be arranged | Optional; specify—A3 | Optional; specify—A3 | NA | Standard | NA |
| | UL 1077: E67320<br>CSA: 16186<br>VDE | UL 1077: E67320<br>CSA: 16186<br>VDE | UL 1077: E67320<br>CSA: 16186<br>VDE | UL 1077: E67320<br>CSA: 16186<br>VDE | CSA: 16186 up to 3.5A<br>VDE: up to 10A |
| Series 48-08 has extra low impedance. | Quick-connect or screw terminals avail., non-standard. DUAL CONTROL available.  | Quick connect or screw terminals avail., non-standard. DUAL CONTROL available. UL approved for primary ON-OFF switching. | Half inch spacing makes this device especially attractive for modern control systems design. | Shunt and auxiliary contacts are standard. DIN track mountable via terminal block #17-P10-Si | ON/OFF version available (suffix —H). Quick-connect terminals (—P10) avail. non-std. For tech. data 48-800-S see Cat. sheet 40806 |
| Catalog Sheet 42433 | Catalog Sheet 40223 | Catalog Sheet 40228 | Catalog Sheet 40237 | ——— | Catalog Sheet 40308<br>(48-800: Cat. Sheet 40806) |
|  |  |  |  |  |  |
| | Shown: 43-500-L10-Si | | Shown: 42-01 | | Shown: 48-300-S-H |

# E-T-A® CIRCUIT BREAKERS

| TRIPPING TIMES IN SECONDS AT 70° F (21° C) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| SERIES | PERCENT RATED CURRENT 100% | 200% | 300% | 400% | 500% | 600% | 1000% | |
| 41-10/41-11 0.1-2.5A<br>3-16A | NO TRIP | 20-70<br>10-40 | 10-25<br>3-12 | 6-15<br>2-6 | 4-10<br>1-4 | 3-7<br>.6-3 | 1.5-3.5<br>.2-1.5 | |
| 3120 0.1-2A<br>2.5-16A | NO TRIP | 10-60<br>8-40 | 3.5-15<br>3-10 | 2-7<br>1.5-5 | 1.5-5<br>1-3 | 1-3.5<br>.6-2 | .8-2<br>.2-1 | |
| 45-700-DD | NO TRIP | 10-40 | 3-18 | 2-9 | 1-6 | .6-5 | .2-2.5 | |
| 41-06 0.1-2.5A<br>7-10A | NO TRIP | 10-40<br>7-25 | 5-20<br>2.5-10 | 3-10<br>1-6 | 2-8 | 1.5-7 | | |
| 44-100 | NO TRIP | 10-40 | 5-18 | 2.5-9 | 1.5-6 | 1-5 | | |
| 45-700/45-000 | NO TRIP | 10-40 | 3-18 | 2-9 | 1-6 | .6-5 | .2-2.5 | |
| 46-400/46-200 | NO TRIP | 10-40 | 3-18 | 2-9 | 1-6 | .6-5 | .2-2.5 | |
| 44-800/44-500 | NO TRIP | 10-40 | 3-18 | 2-9 | 1-6 | .6-5 | | |
| 46-500 | NO TRIP | 20-45 | 7-20 | 4-12 | 3-8 | 2-6 | | |
| 1658 | NO TRIP | 5-25 | 1.5-8 | 1-5 | | | | |
| 483-TC/583-TC | NO TRIP | 3.5-18 | 1-8 | .5-3 | 0.4-1.4 | | 0.1-0.35 | |
| 48-2-S14-LN2 | NO TRIP | 10-80 | 3-30 | 1.2-12 | 1-8 | .5-6 | .1-3.5 | |
| 41-2-S14-LN2 | NO TRIP | 10-65 | 3-20 | 1.5-12 | 1-8 | .6-6 | .2-3.5 | |
| 41-3-S14-LN2 | NO TRIP | 12-80 | 3-25 | 1.2-12 | 1-7 | .5-5 | .1-2 | |
| 45-2-S-N2 | NO TRIP | 12-100 | 3-30 | 1.5-10 | .8-5 | .4-3 | max. 1 | 3000A<br>max. .05 |
| 44-7-S-H-N | NO TRIP | 30-180 | 15-90 | 8-40 | 5-20 | 3-15 | .006-6 | 2000%<br>max. .02 |
| 43-400/43-500/42-01 | NO TRIP | 10-40 | 3-18 | 1.5-9 | .8-6 | .003-4 | .003-2 | 2000%<br>max. .02 |
| 2210 -F1 curve/dc<br>-M1 curve/ac&dc | NO TRIP | 5-50<br>10-40 | 3-20 | .002-10<br>2-12 | .002-.010<br>1-8 | .002-10 | .002-.10<br>.002-2 | 2000%<br>max. .01 |
| 48-300 | NO TRIP | 10-45 | 3-18 | 1.5-12 | 1-8 | .7-5.5 | | |

**Typical temperature factors for elevated temperatures. Find proper current rating of circuit breaker by multiplying actual full load current with these factors. Select closest (higher) amp rating.**

| Temperature | 100°F (37.8°C) | 120°F (48.9°C) | 140°F (60°C) | 160°F (71.1°C) |
|---|---|---|---|---|
| Factor | 1.1 | 1.2 | 1.3 | 1.4 |

E-T-A CIRCUIT BREAKERS • 236 HOOD ROAD., MARKHAM, ONT. L3R 3K8 • TEL. (416) 475-5886 • FAX: (416) 475-5889

# E-T-A® CIRCUIT BREAKERS

**WORLDWIDE APPROVALS** — Only E-T-A offers a most complete line of circuit protective devices with international approvals in place. International marketing of your product is made easy with E-T-A.

**TRIP FREE AND FOOLPROOF** — E-T-A circuit breakers cannot be held closed against an overload — Unlike some circuit breakers, will not cycle should the reset button be held in "ON" position. Exceptions: Series 1658 and 48-08.

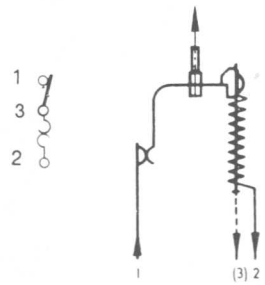
**100% TESTED AND CALIBRATED** — E-T-A circuit breakers are 100% calibrated and tested. They meet rigid manufacturing specifications and are covered by the E-T-A Standard Product Warranty.

**MANY OPTIONS** — Non-standard terminal configurations. Non-standard current ratings. Voltage energized ratings to provide manual reset timer capabilities. DUAL CONTROL circuit breaker, including models with Dual Ampere ratings for 115/230V ac applications, present possibilities for sophisticated control circuitry and their protection.

**E-T-A's APPLICATION ENGINEERING SERVICE IS INDUSTRY'S BEST** — Let us demonstrate the unique capabilities of E-T-A circuit breakers. Contact us the next time you have a special circuit breaker application.

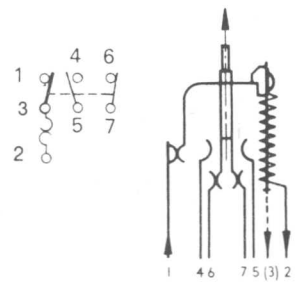
**Typical internal WIRING DIAGRAMS and contact configurations. Special wirings on request.**

Single pole, Series trip



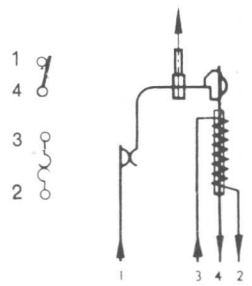

SERIES:
41-10/41-11
45-700-DD
41-04/05/06
44-100
45-700
45-000-H

Single pole w. aux. contacts




SERIES:
46-400-Si
46-200-H-Si

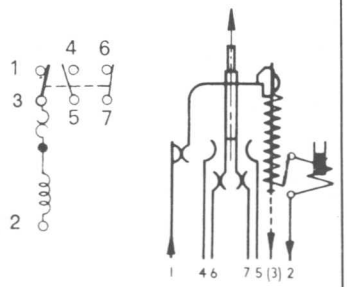
Relay trip




SERIES:
44-800
44-500-H

1-4: Switch circuit
2-3: Control circuit

Thermal — Magnetic




SERIES:
43-400-Si
43-300-Si
43-500-Si
42-01
22-10

**Terminal numbering system is identical for most products as follows:**
**1-2: Main circuit.** **3: Shunt tap.** **4-5: Aux. contacts NO.** **6-7: Aux. contacts NC.**

**5 STEP ORDERING GUIDE FOR ROCKER SWITCH/CIRCUIT BREAKERS, TOGGLES AND BATONS**
**(select one from each group 1 - 2 - 3 - 4 - 5)**

**Basic Series**

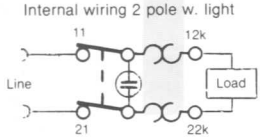
41-10-P10, 1 POLE w/o light
41-11-P10, 1 POLE illuminated

115 V neon standard
12, 24, 230 V on request

3120, 2 POLE

If illumination is required, please specify 12, 24, 115 or 230V. Lamp voltage and pole to pole main circuit voltage must be identical. No external resistor required.

Internal wiring 2 pole w. light




**Mounting Style**
Snap-in mount ROCKERS, 1 POLE

-F30-RS for panels .039 to .138"
-F31-RS for panels .079 to .250"
-F40-RS as -F30, with safety shield
-F41-RS as -F31, with safety shield

Snap-in mount ROCKERS, 2 POLE
-F321-P7T1-R, panels .039 to .250"
-F323-P7T1-R, with safety shield

Single hole mount, 1 POLE only
-G10-OT TOGGLE handle
-G10-OB BATON handle

Illuminated Toggles. Batons available.
Splash water / Dust seals available.
Consult E-T-A.

**Handle Color**

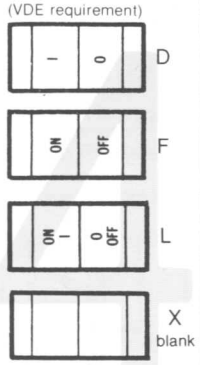
01 black
02 white
04 red
06 blue
08 gray
09 green

(may be used with 12V or 24V lamps)

neon lighted
12 transparent white
14 transparent red
15 transparent orange
19 transparent green

**Rocker Marking**

(VDE requirement)




**Current Rating**
(Trip current 140% of rated amp)

| | |
|---|---|
| 0.1A | 2.0A |
| 0.2A | 2.5A |
| 0.3A | 3.0A |
| 0.4A | 3.5A |
| 0.5A | 4.0A |
| 0.6A | 5.0A |
| 0.7A | 6.0A |
| 0.8A | 8.0A |
| 1.0A | 10.0A |
| 1.2A | 12.0A |
| 1.5A | 15.0A |
| 1.8A | 16.0A |

Examples: (please specify illumination voltage separately, if desired)

| | | | | | |
|---|---|---|---|---|---|
| 1 POLE: | 41-11-P10 | -F30-RS | 14 | -F | 3 A |
| 2 POLE: | 3120 | -F321-P7T1-R | 01 | -F | 3 A |

**E-T-A CIRCUIT BREAKERS • 236 HOOD ROAD., MARKHAM, ONT. L3R 3K8 • TEL. (416) 475-5886 • FAX: (416) 475-5889**

| Series | STANDARD CURRENT RATINGS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Amp. | 41-10/41-11 | 3120 | 45-700-DD | 41-04/05/06 | 44-100 | 45-700/45-000 | 46-400/46-200 | 44-800/44-500 | 46-500 | 1658 | 483/583 | 48-2-S14-LN2 | 41-2-S14-LN2 | 41-3-S14-LN2 | 48-08 | 43/400/-500/42-01 | 2210 | 48-300 |
| 0.05 | | | X | X | X | X | X | X | | | | | | | X | X | | |
| 0.08 | | | X | X | X | X | X | X | | | | | | | X | X | | |
| 0.1 | X | X | X | X | X | X | X | X | X | | | | | | X | X | X | |
| 0.2 | X | X | X | X | X | X | X | X | X | | | | | | X | X | X | |
| 0.3 | X | X | X | X | X | X | X | X | X | | | | | | X | X | X | |
| 0.4 | X | X | X | X | X | X | X | X | X | | | | | | X | X | X | |
| 0.5 | X | X | X | X | X | X | X | X | X | | | | | | X | X | X | X |
| 0.6 | X | X | X | X | X | X | X | X | X | | | | | | X | X | X | |
| 0.7 | X | X | X | X | X | X | X | X | X | | | | | | X | X | | |
| 0.8 | X | X | X | X | X | X | X | X | X | | | | | | X | X | X | |
| 1.0 | X | X | X | X | X | X | X | X | X | | X | | X | | X | X | X | X |
| 1.2 | X | X | X | X | X | X | X | X | X | | | | | | | X | | X |
| 1.5 | X | X | X | X | X | X | X | X | X | | | | | | X | X | X | X |
| 1.8 | X | X | X | X | X | X | X | X | X | | | | | | X | X | | |
| 2.0 | X | X | X | X | X | X | X | X | X | | X | | X | | X | X | X | X |
| 2.5 | X | X | X | X | X | X | X | X | X | | X | | | | X | X | X | X |
| 3.0 | X | X | X | X | X | X | X | X | X | | X | X | X | | X | X | X | X |
| 3.5 | X | X | X | X | X | X | X | X | X | | | | | | | X | | X |
| 4.0 | X | X | X | X | X | X | X | X | X | | X | | X | | | X | X | X |
| 4.5 | | | X | X | X | X | X | X | X | | | | | | | X | | X |
| 5.0 | X | X | X | X | X | X | X | X | X | X | X | X | X | | | X | X | X |
| 5.5 | | | | | | | | | | | | | | | | X | | X |
| 6.0 | X | X | X | X | | X | X | X | X | X | | | | | | X | X | X |
| 6.5 | | | | | | | | | | | | | | | | X | | X |
| 7.0 | | | X | X | | X | X | X | X | X | | | | | | X | | X |
| 7.5 | | | | | | | | | | | X | X | | | | | | X |
| 8.0 | X | X | X | X | | X | X | X | X | X | | | X | | | X | X | X |
| 9.0 | | | | | | | | | X | X | | | | | | X | | X |
| 10 | X | X | X | X | | X | X | | X | X | X | X | X | | | X | X | X |
| 11 | | | | | | | | | X | X | | | | | | X | | |
| 12 | X | X | X | | | X | X | | X | X | | | | | | X | X | X |
| 13 | | | X | | | X | X | | X | X | | | | | | X | | |
| 14 | | | | | | | | | X | X | | | | | | X | | |
| 15 | X | X | X | | | X | X | | X | X | X | X | X | | | X | | X |
| 16 | X | X | X | | | X | X | | | | | | | | | | X | |
| 17 | | | X | | | X | | | | | | | | | | | | |
| 20 | | | X | | | X | | | | X | X | X | X | | | | | |
| 22 | | | X | | | X | | | | | | | | | | | | |
| 25 | | | X | | | X | | | | X | X | X | X | | | | | |
| 30 | | | | | | | | | | | | X | | X | | | | |
| 35 | | | | | | | | | | | | X | | X | | | | |
| 40 | | | | | | | | | | | | | | X | | | | |
| 50 | | | | | | | | | | | | | | X | | | | |
| 60 | | | | | | | | | | | | | | X | | | | |
| 70 | | | | | | | | | | | | | | X | | | | |

**Up to 400 amp, see series 45-2 and 44-7. Intermediate ratings upon request.**